10/07/03&11/12/08SUPPLEMENTAL ACTION

This supplemental Final Office Action is issued as a replacement for the Final Office Action mailed on 07/11/2008 and in response to the telephonic interview on 10/07/2008 and on 11/12/2008. Applicant's arguments filed on 04/07/2008 have been fully considered and addressed below.

Declaration under 37 C.F.R. § 1.132

The declaration under 37 CFR 1.132 filed on 04/07/2008 is fully considered, however, it is insufficient to overcome the rejection of claims 1-12 under 35 U.S.C. 103(a) as being unpatentable over Inazu et al. (in IDS, Peptide Science 1998, M. Kondo Edition, p. 153-156) and Koketsu et al. (The journal of Food Science, 1993, Vol. 58, No. 4, p.743-747) and in further in view of Yamamoto, K. (Journal of Bioscience and Bioengineering, 2001, Vol. 92, No. 6, p.493-501), as set forth in the last Office action because:

Although the evidence may establish that the yield of the product by using a combination of a protease and a peptidase with the same process in which only a protease is used or only a peptidase is used was two or three times greater, however, it is not sufficient to outweigh the evidence of obviousness established by the record. Because with this evidence Applicants has not established that the obtained result was

indeed unexpected because it is a well established proposition of patent law that no patentable invention resides in combining old ingredients of known characteristics where the results obtained thereby are no more than the additive effect of the ingredients. See *In re Sussman,* 1943 C.D. 518; *In re Huellmantel* 139 USPQ 496; *In re Crockett et al,* 1266 USPQ 186.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

Claims 1-12 are rejected under 35 U.S.C. 103(a) as being unpatentable over Inazu et al. (in IDS, Peptide Science 1998, M. Kondo Edition, p. 153-156) in view of Koketsu et al. (The journal of Food Science, 1993, Vol. 58, No. 4, p.743-747) and further in view of Yamamoto, K. (Journal of Bioscience and Bioengineering, 2001, Vol. 92, No. 6, p.493-501), and further in view of Narahashi et al. (Journal of Biochemistry, 1967, Vol. 62, No.6, Abstract).

Claims 1-12 are drawn to a process for preparing asparagine-linked oligosaccharide derivatives including the steps of (a) treating a delipidated egg yolk with a protease to obtain a mixture of peptide-linked oligosaccharides (b) treating the mixture of peptide-linked oligosaccharides with a peptidase to obtain a mixture of aspargine-

linked oligosaccharides, (c) introducing a lipophilic protective group into the asparagine-linked oligosaccharides, and (d) subjecting the mixture of asparagine-linked oligosaccharide derivatives to a fractionating chromatography using a reverse phase column to separate the mixture, delipidating an avian egg yolk with an organic solvent, penta- (hepta-, nona-) to undecasaccharide derivatives, the lipophilic protective group is a carbonate-containing group, the lipophilic protective group is Fmoc group, the asparagine-linked oligosaccharides obtained by step (b) are hydrolyzed before the subsequent step to cut off some sugar moieties, the asparagine-linked oligosaccharides obtained in the mixture by step (c) are hydrolyzed before the subsequent step to cut off some sugar moieties.

Inazu et al. teach a process for preparing asparagine-linked oligosaccharide derivatives, treating an egg (from ovalbumin) with a protease and a peptidase (treating with pronase which contains peptidases and proteinases). Inazu et al. teach introducing a lipophilic protective group into the asparagine-linked oligosaccharides, and subjecting the mixture of asparagine-linked oligosaccharide derivatives to a fractionating chromatography using a reverse phase column to separate the mixture. Inazu et al. teach obtaining penta- to undecasaccharide derivatives (p. 153, Abstract and p. 154, Figure 1. step 1, and p.156 1st paragraph lines 4-5). Inazu et al. also teach 13 mg of product was obtained from one egg (an egg) (p.154 1st paragraph lines 9-10).

Inazu et al. do not teach a delipidated egg yolk. However, Koketsu et al. teach obtaining asparagine-linked oligosaccharide derivatives (sialyloligosaccharides) from delipidated egg yolk (DEY) (Abstract, and p. 747 Conclusion). Koketsu et al. teach

delipidating by treating egg yolk with ethanol (organic solvent), and separating the mixture of oligosaccharides by reverse-phase column. Koketsu et al. also teach the oligosaccharide derivatives are hydrolyzed to cut off some sugar moieties. Koketsu et al. teach obtaining an undecasaccharide derivative (Abstract, p.743 2nd column, 3rd paragraph, lines 1-2, p. 744, 2nd column 4th paragraph, lines 1-5, and p. 746, Figure 5, 3rd oligosaccharide derivative). Koketsu et al. further teach sialyloligosaccharides are being used to create drugs and food companies formulate functional foods by addition of sialyloligosaccharides. Koketsu et al. teach chemical methods for preparation of sialyloligosaccharides are cumbersome and laborious (p.743 Introduction, 1st column 2nd paragraph).

Further motivation is in Yamamoto who teaches glycosylated peptide containing asparagine-linked oligosaccharide (N-acetylglucosaminyl peptide with an N-acetylglucosamine moiety bound to the asparaginyl residue of the peptide) have higher degree of resistance to protease digestion (Abstract). Yamamoto further teaches chemical synthesis of oligosaccharides are labor–intensive and involve complicated steps, on the other hand, enzymatic methods have the advantages because of their high stereo- and regio-selectivities (p. 493 Introduction 1st column, 1st paragraph).

Therefore, in view of the above teachings, a person of ordinary skill in the art at the time the invention was made could have been motivated to use delipidated egg yolk as taught by Koketsu et al. in the method as taught by Inazu et al. to provide a process for preparing asparagine-linked oligosaccharide derivatives with predictable result of separating asparagine-linked oligosaccharide derivatives from the delipidated egg yolk.

The motivation as taught by Koketsu et al. would be the presence of asparagine-linked oligosaccharides in the delipidated egg yolk, and because chemical methods for preparation of asparagine-linked oligosaccharides are cumbersome and laborious.

Response to Arguments

Applicant's arguments filed on 04/07/2008 have been fully considered but they are not persuasive.

Applicant argues that there in no proper motivation to make the specific modification to the art that has proposed, and the proposed modification would provide reasonably expected results.

Applicant argues that it is essential to use a delipidated egg yolk and to use a combination of a protease and a peptidase.

However, as mentioned immediately above, Inazu et al. teach treating with pronase, and a person of ordinary skill in the art at the time the invention was made would have known that pronase contain peptidases in addition to proteases (see Narahashi et al. Abstract). Thus Inazu et al. teach a combination of a protease and a peptidase.

Moreover, as mentioned immediately above, Koketsu et al. teach the isolating asparagine-linked oligosaccharide derivatives present in the delipidated egg yolk. Thus, a person of ordinary skill in the art would have been motivated to use delipidated egg yolk as a starting material for preparing asparagine-linked oligosaccharide derivatives.

Declarant argues that the process employed a delipidated egg yolk as a starting material and used a combination of a protease and a peptidase and 13.3 mg of the

desired material is obtained, and the method exhibits an excellent and unexpected effect of two or three times increase in yield.

However, as mentioned immediately above, Inazu et al. teach 13 mg of product was obtained from one egg by the method (p.154 1st paragraph lines 9-10). Therefore, a person of ordinary skill in the art at the time the invention was made would have expected to obtain the higher yield using a combination of a protease and a peptidase.

The claimed method would have been obvious because one of ordinary skill in the art at the time the invention was made could have motivated to use a known method of separating asparagine-linked oligosaccharide derivatives using a known and readily available source of asparagine-linked oligosaccharide derivatives (delipidated egg yolk) taught by prior art with the predictable results of separating asparagine-linked oligosaccharide derivatives present in the delipidated egg yolk.

Conclusion

No claims are allowed.

THIS ACTION IS MADE FINAL. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the

shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Kade Ariani whose telephone number is (571) 272-6083. The examiner can normally be reached on 9:00 am to 5:30 pm EST Mon-Fri.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Michael Wityshyn can be reached on (571) 272-0926. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

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